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Handbook of official hay
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Washington

1950

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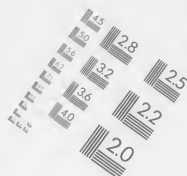
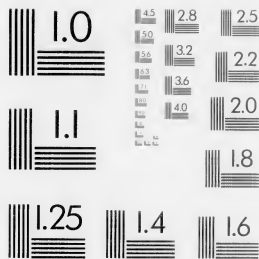
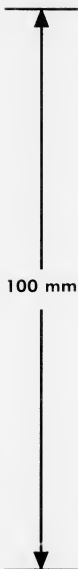
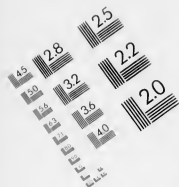
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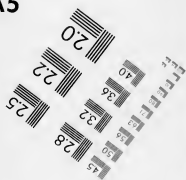


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UNITED STATES
DEPARTMENT OF AGRICULTURE
PRODUCTION AND MARKETING
ADMINISTRATION

GRAIN BRANCH

HANDBOOK
of
OFFICIAL HAY AND
STRAW STANDARDS



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Box 792

REVISED EFFECTIVE JULY 1, 1949

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UNITED STATES DEPARTMENT OF AGRICULTURE PRODUCTION AND MARKETING ADMINISTRATION

GRAIN BRANCH

HANDBOOK of OFFICIAL HAY AND STRAW STANDARDS

United States Standards for Hay and Straw
Important Features of Federal Hay Inspection

REVISED EFFECTIVE JULY 1, 1949



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1950

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U. S. DEPARTMENT OF AGRICULTURE
PRODUCTION AND MARKETING ADMINISTRATION
GRAIN BRANCH

UNITED STATES STANDARDS FOR HAY
AND STRAW

(Title 7, Ch. I, Pt. 57 of the Code of Federal
Regulations) (14 F. R. 3433-3441)

Pursuant to the authority vested in the Secretary of Agriculture by the Agricultural Marketing Act of 1946 (60 Stat. 1087; 7 U. S. C. 1621-1627) and the Department of Agriculture Appropriation Act for 1949 (62 Stat. 507; 7 U. S. C. 414), the official United States Standards for Hay and Straw are hereby revised to read as follows:

II

APR 1 3 1951 PVR

PART 57—UNITED STATES STANDARDS
FOR HAY AND STRAW

SUBPART A—UNITED STATES STANDARDS FOR HAY
Sec.

- 57.1 Terms identified.
- 57.2 Principles governing application of standards.
- 57.3 Alfalfa and Alfalfa Mixed Hay (Group I).
- 57.4 Timothy and Clover Hay (Group II).
- 57.5 Prairie Hay (Group III).
- 57.6 Johnson and Johnson Mixed Hay (Group IV).
- 57.7 Grain, Wild Oat, Vetch, and Grain Mixed Hay (Group V).
- 57.8 Lespedeza and Lespedeza Mixed Hay (Group VI).
- 57.9 Soybean and Soybean Mixed Hay (Group VII).
- 57.10 Cowpea and Cowpea Mixed Hay (Group VIII).
- 57.11 Peanut and Peanut Mixed Hay (Group IX).
- 57.12 Grass Hay (Group X).
- 57.13 Mixed Hay (Group XI).

SUBPART B—UNITED STATES STANDARDS FOR STRAW

- 57.50 Terms identified.
- 57.51 Principles governing application of standards.
- 57.52 Grades for straw.

Authority: Sections 57.1 to 57.52 were issued under 60 Stat. 1087; 62 Stat. 507; 7 U. S. C. 1621-1627, 414.

UNITED STATES STANDARDS FOR HAY¹

Terms Identified

For the purposes of the United States standards for hay:

(a) *Hay*. Hay shall be the harvested, unthreshed herbage of forage plants which meets requirements of any one of the various classes in groups I to XI, inclusive, as set forth in this subpart; is not both coarse and woody; contains not more than 35 percent of foreign material; and contains not more than 35 percent of mois-

¹The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act (21 U. S. C. 301 et seq.).

ture. The term "hay" shall include peanut vines from which the peanuts have been removed.

(b) *Groups*. The standards for hay shall be divided into eleven groups as follows: Group I, Alfalfa and Alfalfa Mixed Hay; Group II, Timothy and Clover Hay; Group III, Prairie Hay; Group IV, Johnson and Johnson Mixed Hay; Group V, Grain, Wild Oat, Vetch, and Grain Mixed Hay; Group VI, Lespedeza and Lespedeza Mixed Hay; Group VII, Soybean and Soybean Mixed Hay; Group VIII, Cowpea and Cowpea Mixed Hay; Group IX, Peanut and Peanut Mixed Hay; Group X, Grass Hay; and Group XI, Mixed Hay.

(c) *Classes*. Each group of hay includes one or more classes which are based on the kind of hay or mixture of various kinds.

(d) *Grades and grade designations*. Grades are the numerical grades, sample grade, and special grades provided for in the classes of hay. A grade designation is the formal expression of the class, quality, and condition of a lot or sample of hay and consists of the letters U. S., the grade number or sample grade, the name of any applicable special grade or grades; and the class name.

(e) *Forage plants*. Forage plants shall be grasses, legumes, sedges, and rushes, which are harvested for hay and which have recognized feed value as determined by the Grain Branch, Production and Marketing Administration, United States Department of Agriculture.

(f) *Alfalfa*. Alfalfa may include not more than 10 percent (of the total forage plants) of clover, vetch hay, and/or other forage legumes, except that other legumes shall not be considered a part of the alfalfa in either of the classes Alfalfa Clover Mixed Hay or Mixed Hay.

(g) *Timothy*. Timothy may include not more than 10 percent (of the total forage plants) of other grasses, except that other grasses shall not be considered a part of the timothy in any of the classes Timothy Light Grass Mixed Hay, Timothy Heavy Grass Mixed Hay, Grass Hay, or Mixed Hay.

(h) *Clover*. Clover shall be red clover, alsike clover, and/or white clover and may include not more than 10 percent (of the total forage plants) of alfalfa, vetch hay, and/or other forage legumes, except that alfalfa shall not be considered a part of the clover in the class Alfalfa Clover Mixed Hay and other legumes shall not be considered a part of the clover in the class Mixed Hay.

(i) *Upland grasses*. Upland grasses shall be bluestems (*Andropogon* spp.), gramagrasses (*Bouteloua* spp.), paspalums (*Paspalum* spp.), wheatgrasses (*Agropyron* spp.), prairie junegrass (*Coeleria cristata*), Indiangrass (*Sorghastrum nutans*), and/or other upland grasses which grow commonly in virgin upland prairie meadows. Upland grasses may include not more than 10 percent (of the total forage plants) of midland grasses and/or other grasses, except that midland grasses shall not be considered a part of the upland grasses in any of the classes Midland Prairie Hay, Upland-Midland Prairie Mixed Hay, Grass Hay, or Mixed Hay and other grasses shall not be considered a part of the upland grasses in either of the classes Grass Hay or Mixed Hay.

NOTE.—Questions relating to, or samples of, the kinds of grasses that may be included in upland grasses should be submitted to the Grain Branch, Production and Marketing Administration, United States Department of Agriculture, for determination or interpretation.

(j) *Midland grasses*. Midland grasses shall be sloughgrass or prairie cordgrass (*Spartina*

(b) *perennial*, bluejoint (*Calamagrostis* spp.), greenleaf (*Calamagrostis canadensis*), and/or *perennial* (*Calamagrostis* spp.). Grasses shall be cut at the following stages or in combination: (1) Redtop, orchardgrass, Kentucky bluegrass, Canada blue grass, crabgrass, smooth bromegrass, ryegrass, barnyardgrass, quackgrass, psyllium, Bermuda grass, wheatgrasses; (2) the following grasses if early cut—wild-rye, annual bromegrasses (such as cheat), pigeongrass (sometimes called foxtail or wild millet), broomsedge; (3) such other grasses, sedges, and/or rushes as occur in hay meadows and are not otherwise provided for. Grasses may also include not more than 10 percent (of the total forage plants) of timothy, Johnson grass and/or grain hay, except that they shall not be considered a part of grasses in either of the classes Grass Hay or Mixed Hay.

(1) *Johnson grass*. Johnson grass may include not more than 10 percent (of the total forage plants) of other grasses and not more than 10 percent (of the total forage plants) of early-cut cane hay, except that other grasses shall not be considered a part of the Johnson grass in any of the classes Johnson Light Grass Mixed Hay, Johnson Heavy Grass Mixed Hay, Grass Hay, or Mixed Hay.

(m) *Oat hay*. Oat hay shall be hay, of all varieties of tame oats, which does not meet the requirements for red oat hay, and may include not more than 10 percent (of the total forage plants) of wheat hay and/or wild oat hay, and not more than 5 percent (of the total forage plants) of barley hay and/or grasses.

(n) *Red oat hay*. Red oat hay may include not more than 10 percent (of the total forage plants) of other varieties of tame oat hay, wheat hay, and/or wild oat hay, and not more than 5 percent (of the total forage plants) of barley hay and/or grasses.

(o) *Wheat hay*. Wheat hay may include not more than 10 percent (of the total forage plants) of oat hay and/or wild oat hay and not more than 5 percent (of the total forage plants) of other grain hay and not more than 5 percent (of the total forage plants) of other grain hay and not more than 5 percent (of the total forage plants) of grasses.

(p) *Wild oat hay*. Wild oat hay may include not more than 10 percent (of the total forage plants) of grasses.

(q) *Barley hay*. Barley hay may include not more than 10 percent (of the total forage plants) of other grain hay and not more than 5 percent (of the total forage plants) of grasses.

(r) *Grain hay*. Grain hay shall be hay of the following grains: Oats, barley, wheat, rye, and/or wild oats.

(s) *Vetch hay*. Vetch hay may include not more than 10 percent (of the total forage plants) of alfalfa, clover, and/or other forage legumes, except that other legumes shall not be considered a part of the vetch hay in the class Mixed Hay.

(t) *Lepedeza*. Lеспедеза (annual) may include not more than 10 percent (of the total forage plants) of alfalfa, clover, vetch hay, and/or other forage legumes, except that other legumes shall not be considered a part of the lespedeza in the class Mixed Hay.

(u) *Soybean hay*. Soybean hay may include not more than 10 percent (of the total forage plants) of cowpea hay, lespedeza, black medic (yellow trefoll), vetch hay, clover and/or other forage legumes, except that other legumes shall not be considered a part of the soybean hay in the class Mixed Hay.

(v) *Cowpea hay*. Cowpea hay may include not more than 10 percent (of the total forage plants) of soybean hay, lespedeza, and/or other forage legumes, except that other legumes shall not be considered a part of the cowpea hay in the class Mixed Hay.

(w) *Peanut hay*. Peanut hay shall be the leaves and stems of the peanut plant, including such portions of the roots and peanut pods as

are normally present either before or after the peanuts have been removed, and may include not more than 10 percent (of the total forage plants) of soybean hay and/or other forage legumes, except that other legumes shall not be considered a part of the peanut hay in the class Mixed Hay.

(x) *Legumes*. Legumes shall be alfalfa, lespedeza, black medick (yellow trefoil), vetch hay, clover, and/or other plants of the pea family suitable for forage.

(y) *Foreign material*. Foreign material shall be any of the following, singly or in combination:

(1) Weeds, three-awn or wire grasses (*Aristida* spp.), ticklegum or winter bent (*Agrostis hiemalis*), lovegrasses (*Eragrostis* spp.); (2) the following grasses if mature—wild-rye, annual bromegrasses (such as cheat), pigeongrass (sometimes called foxtail or wild millet), broom-sedge, needlegrasses (*Stipa* spp.) from which the needles have fallen; (3) such sedges, rushes, and/or other plants as are coarse and woody or otherwise not suitable for feeding purposes; (4) overripe grain hay, cornstalks, grain straw, stubble, chaff; and (5) other objectionable matter which occurs naturally in hay.

(z) *Injurious foreign material*. Injurious foreign material shall be any of the following, singly or in combination: Sandburs, poisonous plants, harsh bearded grasses (such as mature foxtail barley or squareroil grass (*Hordeum jubatum*), mature ripgut or broncho grass (*Bromus rigidus*), grasses having a sharp-pointed culm at the base of the seed (such as untared needlegrasses (*Stipa* spp.) with the needles attached), mature prairie three-awn grass (*Aristida oligantha*), and other matter which is injurious when fed to livestock.

(aa) *Filled grain*. Filled grain in any of the grain hays shall be the kernels of grain which have reached the late dough stage and which may shrivel somewhat in drying.

(bb) *Color*. The term "percent of green color" refers to the amount of green color (green appearance), in field-cured hay, computed as a percentage of the 100-percent green color of hay produced so as to have received no discoloration from maturity, sun bleach, dew, rain, or other damage.

NOTE.—Field-cured hay which on casual examination appears to be of uniform green color, nearly always contains slight discolorations which materially lower the amount of green color from the perfect color standard. Thus the standard for the No. 1 grade in the various groups of hay represents an amount of color that is relatively high for field-cured hay.

Principles Governing Application of Standards

The following principles shall apply in the determination of the classes and grades of all groups of hay:

(a) *Basis of class and grade determinations*.

(1) The determination of foreign material, injurious foreign material, temperature, odor, and general condition shall be on the basis of the hay as a whole.

(2) The determination of class shall be on the basis of the total forage plants comprising the mixture.

(3) The determination of leafiness of alfalfa, clover, lespedeza, soybean hay, cowpea hay, and peanut hay shall be on the basis of the total alfalfa, clover, lespedeza, soybean hay, cowpea hay, or peanut hay, as the case may be.

(4) The determination of alfalfa stalks bearing brown and/or black seed pods and upland prairie stalks having seed heads and/or jointed stems shall be on the basis of the total alfalfa or upland grasses.

(5) The determination of coarse and/or fine hay in alfalfa, Johnson, grain hay, and soybean hay shall be on the basis, respectively, of the alfalfa, Johnson grass, grain, and soybean stalks present in the hay. Measurements for texture shall be made two inches from the cut end of the stalk.

(6) The determination of color shall be upon the basis of the method prescribed by the Grain Branch, Production and Marketing Administration, United States Department of Agriculture.

(b) *Methods of determining percentages.*

(1) Percentages of mixtures, leafiness, and foreign material shall be ascertained by weight.

(2) Percentages of green color shall be ascertained from the color conversion tables prepared by the Grain Branch, Production and Marketing Administration, United States Department of Agriculture, for alfalfa, timothy, clover, prairie, Johnson, soybean, and grass hay.

(3) Percentages of diameter sizes in alfalfa, Johnson, grain hay, and soybean hay shall be ascertained by count of the alfalfa, Johnson, grain, and soybean stalks in the hay.

(4) Percentages of moisture shall be ascertained by the air oven and the method of use thereof described in Service and Regulatory Announcements No. 147 (revised August 1941) issued by the Agricultural Marketing Service (now Production and Marketing Administration), United States Department of Agriculture, or ascertained by any device and method which give equivalent results.

Alfalfa and Alfalfa Mixed Hay

(Group 1)

(a) Classes and Class Requirements

Class	Mixture percentages
Alfalfa-----	Alfalfa with not over 5 percent of grasses.
Alfalfa light grass mixed.	A mixture of alfalfa and grasses with over 5 percent but not over 20 percent of grasses.
Alfalfa heavy grass mixed.	A mixture of alfalfa and grasses with over 20 percent but not over 60 percent of grasses.
Alfalfa light timothy mixed.	A mixture of alfalfa and timothy with over 5 percent but not over 30 percent of timothy.
Alfalfa heavy timothy mixed.	A mixture of alfalfa and timothy with over 30 percent but less than 70 percent of timothy.
Alfalfa clover mixed....	A mixture of alfalfa and clover with over 10 percent but not over 50 percent of clover and not over 10 percent of grasses.
Alfalfa light Johnson mixed.	A mixture of alfalfa and Johnson grass with over 5 percent but not over 30 percent of Johnson grass.
Alfalfa heavy Johnson mixed.	A mixture of alfalfa and Johnson grass with over 30 percent but less than 70 percent of Johnson grass.
Alfalfa light grain mixed.	A mixture of alfalfa and grain hay with over 5 percent but not over 20 percent of grain hay, and not over 10 percent of grasses.
Alfalfa heavy grain mixed.	A mixture of alfalfa and grain hay with over 20 percent but less than 60 percent of grain hay, and not over 10 percent of grasses.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Alfalfa and Alfalfa Mixed Hay

U. S. grade	Leafiness of alfalfa (minimum percent of leaves) ¹	Color (minimum percent of green color)	Maximum percent of foreign material
No. 1 ² -----	40	60	5
No. 2-----	25	35	10
No. 3-----	10	40	15
Sample grade-----	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is under-cured, heating, hot, wet, musty, moldy, caked, badly broken, badly weathered, badly frosted, badly overripe, or very dusty; or which is otherwise of distinctly low quality.		

¹ Does not apply in the classes Alfalfa Heavy Grass Mixed Hay, Alfalfa Heavy Timothy Mixed Hay, Alfalfa Heavy Johnson Mixed Hay, and Alfalfa Heavy Grain Mixed Hay.

² Grade No. 1 shall not include hay in which a majority of the alfalfa stalks bear brown and/or black seed pods.

³ Hay, to meet this leafiness requirement, must have at least one-fifth of the alfalfa leaves clinging to the stems.

⁴ Grade No. 3 shall include heavily sweated hay (so-called tobacco brown) which has less than 10 percent color provided that the hay meets the other requirements for that grade.

(c) Special Grades for Alfalfa and Alfalfa Mixed Hay

(1) Extra Leafy Hay—

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Alfalfa, Alfalfa Light Grass Mixed, Alfalfa Light Timothy Mixed, Alfalfa Clover Mixed, Alfalfa Light Johnson Mixed, and Alfalfa Light Grain Mixed in group I in which the leafiness of the alfalfa is 50 percent or more with most of the leaves clinging to the stems, but shall not include hay in which a majority of the alfalfa stalks bear brown and/or black seed pods.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Alfalfa Hay.

(2) Leafy Hay—

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Alfalfa, Alfalfa Light Grass Mixed, Alfalfa Light Timothy Mixed, Alfalfa Clover Mixed, Alfalfa Light Johnson Mixed, and Alfalfa Light Grain Mixed in group I in which the leafiness of the alfalfa is 40 percent or more with at least one-fifth of the leaves clinging to the stems, but shall not include hay in which the leafiness of the alfalfa meets the requirements for extra leafy hay nor hay in which a majority of the alfalfa stalks bear brown and/or black seed pods.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Alfalfa Hay.

(3) Extra Green Hay—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group I which has 75 percent or more green color, but shall not include hay in which a majority of the alfalfa stalks bear brown and/or black seed pods.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Alfalfa Light Grass Mixed Hay.

(4) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group I which has 60 percent or more but less than 75 percent green color, but shall not include hay in which a majority of the alfalfa stalks bear brown and/or black seed pods.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 3 Green Alfalfa Light Timothy Mixed Hay.

(5) *Coarse Hay*—

(i) *Requirements.* Coarse hay shall be hay of any of the grades of any of the classes in group I in which the alfalfa stalks are hard and round and of which more than 30 percent of the stalks have diameters equal to or greater than the diameter of No. 11 steel wire (approximately twelve one-hundredths of an inch) by W & M standard wire gage standards.

(ii) *Grade designation.* When the special grade Coarse is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Coarse."

Example, U. S. No. 2 Coarse Alfalfa Hay.

Timothy and Clover Hay

(Group II)

(a) Classes and Class Requirements

Class	Mixture percentages
Timothy-----	Timothy with not over 10 percent of legumes.
Timothy light clover mixed.	A mixture of timothy and clover with over 10 percent but not over 30 percent of clover.
Timothy heavy clover mixed.	A mixture of timothy and clover with over 30 percent but not over 50 percent of clover.
Timothy light grass mixed.	A mixture of timothy and other grasses with over 10 percent but not over 30 percent of other grasses, and not over 10 percent of legumes.
Timothy heavy grass mixed.	A mixture of timothy and other grasses with over 30 percent but not over 60 percent of other grasses, and not over 10 percent of legumes.
Timothy light alfalfa mixed.	A mixture of timothy and alfalfa with over 10 percent but not over 30 percent of alfalfa.
Clover-----	Clover with not over 20 percent of timothy, other grasses and/or grain hay.
Clover timothy mixed.	A mixture of clover and timothy with over 20 percent but less than 50 percent of timothy.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Timothy and Clover Hay

U. S. Grade	Leafiness of clover (minimum percent of leaves, including blossoms) ¹	Color (minimum percent of green color)	Maximum percent of foreign material
No. 1 ²	40	40	10
No. 2 ²	25	30	15
No. 3.....	10	10	20
Sample grade.....	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly stained, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.		

¹ Applies only in the classes Clover Hay and Clover Timothy Mixed Hay.² Grades No. 1 and No. 2 shall not include hay that is stained.

(c) Special Grades for Timothy and Clover Hay

(1) *Extra Leafy Hay*—

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Clover and Clover Timothy Mixed in group II in which the leafiness of the clover is 50 percent or more with most of the leaves clinging to the stems.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Clover Hay.

(2) *Leafy Hay*—

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Clover and Clover Timothy Mixed in group II in which the leafiness of the clover is 40 percent or more, but shall not include hay in which the leafiness of the clover meets the requirements for extra leafy hay.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Clover Timothy Mixed Hay.

(3) *Extra Green Hay*—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group II which has 55 percent or more green color, but shall not include hay that is stained.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Timothy Hay.

(4) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group II which has 40 percent or more but less than 55 percent green color, but shall not include hay that is stained.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 2 Green Timothy Light Grass Mixed Hay.

Prairie Hay
(Group III)

(a) Classes and Class Requirements

Class	Mixture percentages
Upland prairie.....	Upland grasses with not over 10 percent of legumes.
Midland prairie.....	Midland grasses or a mixture of midland grasses, upland grasses, timothy, and/or other grasses with over 40 percent of midland grasses and not over 10 percent of legumes.
Upland-Midland prairie mixed.	A mixture of upland and midland grasses with over 10 percent but not over 40 percent of midland grasses, and not over 10 percent of legumes.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Prairie Hay

U. S. grade	Color (minimum percent of green color)	Maximum percent of foreign material
No. 1 ¹ 2	50	10
No. 2 ¹ 2	35	15
No. 3 ²	10	20
Sample grade.....	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly stained, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.	

¹ Grades No. 1 and No. 2 shall not include hay that is stained.

² Hay of the class Upland Prairie in which one-third or more of the upland grass stalks bear seed heads and/or jointed stems to meet the requirements of grade No. 1 shall have 65 percent or more green color; grade No. 2 shall have 50 percent or more green color; and grade No. 3 shall have 35 percent or more green color.

(c) Special Grades for Prairie Hay

(1) *Extra Green Hay*—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group III which has 65 percent or more green color, but shall not include hay that is stained or hay of the class Upland Prairie in which one-third or more of the upland grass stalks bear seed heads or jointed stems.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Upland Prairie Hay.

(2) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group III which has 50 percent or more but less than 65 percent green color, but shall not include hay that is stained or hay of the class Upland Prairie in which one-third or more of the upland grass stalks bear seed heads or jointed stems.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 2 Green Upland-Midland Prairie Mixed Hay.

Johnson and Johnson Mixed Hay (Group IV)

(a) Classes and Class Requirements

Class	Mixture percentages
Johnson.....	Johnson grass with not over 10 percent of legumes.
Johnson light grass mixed.	A mixture of Johnson grass and other grasses with over 10 percent but not over 30 percent of other grasses and not over 10 percent of legumes.
Johnson heavy grass mixed.	A mixture of Johnson grass and other grasses with over 30 percent but not over 60 percent of other grasses and not over 10 percent of legumes.
Johnson light alfalfa mixed.	A mixture of Johnson grass and alfalfa with over 10 percent but not over 30 percent of alfalfa.
Johnson light lespedeza mixed.	A mixture of Johnson grass and lespedeza with over 10 percent but not over 30 percent of lespedeza.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Johnson and Johnson Mixed Hay

U. S. grade	Color (minimum percent of green color)	Maximum percent of foreign ma- terial
No. 1.....	40	10
No. 2.....	25	15
No. 3.....	10	20
Sample grade.....	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly stained, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.	

(c) Special Grades for Johnson and Johnson Mixed Hay

(1) *Extra Green Hay*—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group IV which has 55 percent or more green color.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Johnson Hay.

(2) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group IV which has 40 percent or more but less than 55 percent green color.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 3 Green Johnson Light Grass Mixed Hay.

(3) *Fine Hay*—

(i) *Requirements.* Fine Hay shall be hay of any of the grades of the class Johnson in group IV in which 70 percent or more of the Johnson grass stalks have diameters equal to or smaller than the diameter of No. 13 steel wire (approximately nine one-hundredths of an inch), and no stalks have diameters equal to or greater than the diameter of No. 10 steel wire (approximately thirteen one-hundredths of an inch), by W & M standard wire gage standards.

(ii) *Grade designation.* When the special grade Fine is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Fine."

Example, U. S. No. 1 Fine Johnson Hay.

(4) *Coarse Hay*—

(i) *Requirements.* Coarse Hay shall be hay of any of the grades of any of the classes in group IV in which more than 30 percent of the Johnson grass stalks have diameters equal to or greater than the diameter of No. 9 steel wire (approximately fifteen one-hundredths of an inch), by W & M standard wire gage standards.

(ii) *Grade designation.* When the special grade Coarse is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Coarse."

Example, U. S. No. 1 Coarse Johnson Hay.

Grain, Wild Oat, Vetch, and Grain Mixed Hay

(Group V)

(a) Classes and Class Requirements

Class	Mixture percentages
Oat.....	Oat hay with not over 10 percent of legumes.
Red oat.....	Red oat hay with not over 10 percent of legumes.
Wheat.....	Wheat hay with not over 10 percent of legumes.
Barley.....	Barley hay with not over 10 percent of legumes.
Wild oat.....	Wild oat hay or a mixture of wild oat hay and other grain hay with not over 30 percent of other grain hay and not over 10 percent of legumes.
Red oat and wild oat mixed, wheat and wild oat mixed.	A mixture of red oat hay and wild oat hay or wheat hay and wild oat hay with over 10 percent but not over 40 percent of wild oat hay and not over 10 percent of legumes in each case.
Wild oat and grain mixed.	A mixture of wild oat hay and other grain hay with over 30 percent but less than 60 percent of other grain hay and not over 10 percent of legumes.

(a) Classes and Class Requirements—Continued

Class	Mixture percentages
Oat light alfalfa mixed, wheat light alfalfa mixed, barley light alfalfa mixed.	A mixture of oat hay (including red oat hay) and alfalfa, wheat hay and alfalfa, or barley hay and alfalfa with over 10 percent but not over 40 percent of alfalfa and not over 10 percent of grasses including the 5 percent allowance in sec. 57.1 (m), (n), and (q) for oat hay, wheat hay, and barley hay, respectively.
Oat and vetch mixed, wheat and vetch mixed.	A mixture of oat hay (including red oat hay) and vetch hay or wheat hay and vetch hay with over 10 percent but not over 50 percent of vetch hay and not over 10 percent of grasses including the 5 percent allowance in sec. 57.1 (m) and (n) for oat hay and wheat hay, respectively.
Vetch and oat mixed, vetch and wheat mixed.	A mixture of vetch hay and oat hay (including red oat hay) or vetch hay and wheat hay with over 20 percent but less than 50 percent of oat hay, or wheat hay, as the case may be, and not over 10 percent of grasses including the 5 percent allowance in sec. 57.1 (m) and (n) for oat hay and wheat hay, respectively.
Vetch.....	Vetch hay or a mixture of vetch hay and grain hay with not over 20 percent of grain hay.

(b) Numerical and Sample Grades and Grade Requirements for the Classes of Out Hay, Red Out Hay, Barley Hay, Red Out, and Wild Out Mixed Hay, Oat Light Alfalfa Mixed Hay, and Barley Light Alfalfa Mixed Hay

U. S. grade	Maturity	Color	Maximum percentage of foreign material
No. 1 ¹ -----	The grain shall have been cut in the dough stage and shall contain half-formed kernels and "filled" grain, with little or no shattering of kernels. The grain may have been cut in the dough stage and may contain half-formed kernels and "filled" grain, with little or no shattering of kernels. May be fully matured-----	Shall be bright, natural green to yellowish green or bright, reddish purple.	5
No. 2-----		May be yellowish green or reddish purple with traces of green or reddish yellow, slightly discolored, or slightly weathered.	10
No. 3-----		May be yellow, discolored, weathered, or stained.	15
Sample grade-----	Hay of the above classes which does not come within the requirements of any of the numerical grades; or which contains objectionable odor; or which is undercured, heating, hot, weedy, broken, badly stained, badly weathered, badly overripe, or very dusty; or otherwise of distinctly low quality.		

¹ To meet the requirements of grade No. 1, Barley Hay and Barley Light Alfalfa Mixed Hay shall have been cut in the early dough stage or before, and may contain half-formed kernels and a little "filled" grain.

(c) Numerical and Sample Grades and Grade Requirements for the Classes Wheat Hay, Wild Oat Hay, Wheat and Wild Oat Mixed Hay, Wild Oat and Grain Mixed Hay, and Wheat Light Alfalfa Mixed Hay

U. S. grade	Maturity	Color	Maximum percentage of foreign material
No. 1-----	The grain shall have been cut in the milk stage or before and may contain small, shriveled kernels and a little "filled" grain.	Shall be bright, natural green to yellowish green.	5
No. 2-----	The grain shall have been cut in the early dough stage or before and may contain half-formed kernels and some "filled" grain, although such grain shall not predominate.	May be yellowish green to yellow with traces of green, slightly discolored, or slightly weathered.	10
No. 3-----	May be fully matured-----	May be yellow or greenish yellow with many brown leaves, stained, or weathered.	15
Sample grade-----	Hay of the above classes which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material, which has any objectionable odor; or which is undercured, heating, hot, weedy, broken, badly stained, badly overripe, or very dusty; or otherwise of distinctly low quality.		

(d) Numerical and Sample Grades and Grade Requirements for the Classes Oat and Vetch Mixed Hay, Wheat and Vetch Mixed Hay, Vetch and Oat Mixed Hay, Vetch and Wheat Mixed Hay, and Vetch Hay

U. S. grade	Maturity	Color	Maximum percentage of foreign material
No. 1-----	The vetch shall have been cut when the pods on the lower $\frac{1}{3}$ of the plant are one-half filled or before. The grain shall have been cut in the early dough stage or before and may contain half-filled kernels and a little "filled" grain.	Shall be bright, natural green to greenish yellow.	5
No. 2-----	The vetch shall have been cut when the pods on the lower $\frac{2}{3}$ of the plant are one-half filled or before. The grain shall have been cut in the early dough stage or before and may contain some "filled" grain although such "filled" grain shall not predominate. May be fully matured.	May be greenish yellow to brownish yellow, slightly discolored, or slightly weathered.	10
No. 3----- Sample grade.	Hay of the above classes which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is underseeded, heating, hot, wet, musty, moldy, sour, caked, badly broken, badly stained, badly weathered, or very dusty; or otherwise of distinctly low quality.	May be yellowish brown, brown, or weathered.	15

(e) Special Grades for Grain, Wild Oat, Vetch, and Grain Mixed Hay

(1) Coarse Hay—

(i) *Requirements.* Coarse Hay shall be hay of any of the grades of the classes Oat, Red Oat, and Red Oat and Wild Oat Mixed in group V in which more than 30 percent of the oat stalks have diameters equal to or greater than the diameter of No. 6 steel wire (approximately nineteen one-hundredths of an inch), by W & M standard wire gage standards.

(ii) *Grade designation.* When the special grade Coarse is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Coarse."

Example, U. S. No. 2 Coarse Oat Hay.

Lespedeza and Lespedeza Mixed Hay

(Group VI)

(a) Classes and Class Requirements

Class	Mixture percentages
Lespedeza-----	Lespedeza with not over 10 percent of grasses.
Lespedeza light grass mixed.	A mixture of lespedeza and grasses with over 10 percent but not over 30 percent of grasses.
Lespedeza heavy grass mixed.	A mixture of lespedeza and grasses with over 30 percent but not over 60 percent of grasses.
Lespedeza light Johnson mixed.	A mixture of lespedeza and Johnson grass with over 10 percent but not over 30 percent of Johnson grass.
Lespedeza heavy Johnson mixed.	A mixture of lespedeza and Johnson grass with over 30 percent but less than 70 percent of Johnson grass.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Lespedeza and Lespedeza Mixed Hay

U. S. grade	Leafiness of lespe- deza (mini- mum per- cent of leaves) ¹	Color	Maxi- mum per- cent of foreign ma- terial
No. 1-----	45	Shall be green to greenish brown.	10
No. 2-----	30	May be greenish brown to brown.	15
No. 3-----	10	May be brown-----	20
Sample grade--	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.		

¹ Does not apply in the classes Lespedeza Heavy Grass Mixed Hay and Lespedeza Heavy Johnson Mixed Hay.

(c) Special Grades for Lespedeza and Lespedeza Mixed Hay

(1) Extra Leafy Hay--

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Lespedeza, Lespedeza Light Grass Mixed, and Lespedeza Light Johnson Mixed in group VI in which the leafiness of the lespedeza is 55 percent or more, with most of the leaves clinging to the stems.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Lespedeza Hay.

(2) Leafy Hay--

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Lespedeza, Lespedeza Light Grass Mixed, and Lespedeza Light Johnson Mixed in group VI in which the leafiness of the lespedeza is 45 percent or more, but shall not include hay in which the leafiness of the lespedeza meets the requirements for extra leafy hay.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Lespedeza Light Grass Mixed Hay.

(3) Extra Green Hay--

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group VI which has a natural green color.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Lespedeza Hay.

(4) Green Hay--

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group VI which has a green to greenish brown color.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 3 Green Lespedeza Heavy Grass Mixed Hay.

Soybean and Soybean Mixed Hay (Group VII)

(a) Classes and Class Requirements

Class	Mixture percentages
Soybean-----	Soybean hay with not over 15 percent of grasses.
Soybean light grass mixed.	A mixture of soybean hay and grasses with over 15 percent but not over 30 percent of grasses.
Soybean heavy grass mixed.	A mixture of soybean hay and grasses with over 30 percent but not over 60 percent of grasses.
Soybean light Johnson mixed.	A mixture of soybean hay and Johnson grass with over 10 percent but not over 30 percent of Johnson grass.
Soybean heavy Johnson mixed.	A mixture of soybean hay and Johnson grass with over 30 percent but not over 70 percent of Johnson grass.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Soybean and Soybean Mixed Hay

U. S. grade	Leafiness of soybean hay (minimum percent of leaves, including seed pods not badly shattered or in condition to shatter) ¹	Color (minimum percent of green color)	Maximum percent of foreign material
No. 1-----	40	40	10
No. 2-----	25	25	15
No. 3-----	10	10	20
Sample grade-----	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.		

¹ Does not apply in the classes Soybean Heavy Grass Mixed Hay and Soybean Heavy Johnson Mixed Hay.

(c) Special Grades for Soybean and Soybean Mixed Hay

(1) Extra Leafy Hay—

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Soybean, Soybean Light Grass Mixed, and Soybean Light Johnson Mixed in group VII in which the leafiness of the soybean hay is 50 percent or more, with most of the leaves clinging to the stems.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Soybean Hay.

(2) Leafy Hay—

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Soybean, Soybean Light Grass Mixed, and Soybean Light Johnson Mixed in group VII in which the leafiness of the soybean hay is 40 percent or more, but shall not include hay in which the leafiness of the soybean hay meets the requirements for extra leafy hay.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Soybean Light Grass Mixed Hay.

(3) Extra Green Hay—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group VII which has 55 percent or more green color.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Soybean Hay.

(4) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group VII which has 40 percent or more but less than 55 percent green color.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 2 Green Soybean Light Johnson Mixed Hay.

(5) *Coarse Hay*—

(i) *Requirements.* Coarse Hay shall be hay of any of the grades of any of the classes in group VII in which more than 30 percent of the soybean stalks have diameters equal to or greater than the diameter of No. 4 steel wire (approximately twenty-three one-hundredths of an inch), by W & M standard wire gage standards.

(ii) *Grade designation.* When the special grade Coarse is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Coarse."

Example, U. S. No. 2 Coarse Soybean Hay.

Cowpea and Cowpea Mixed Hay

(Group VIII)

(a) Classes and Class Requirements

Class	Mixture percentages
Cowpea.....	Cowpea hay with not over 15 percent of grasses.
Cowpea light grass mixed.	A mixture of cowpea hay and grasses with over 15 percent but not over 30 percent of grasses.
Cowpea heavy grass mixed.	A mixture of cowpea hay and grasses with over 30 percent but not over 60 percent of grasses.
Cowpea light Johnson mixed.	A mixture of cowpea hay and Johnson grass with over 10 percent but not over 30 percent of Johnson grass.
Cowpea heavy Johnson mixed.	A mixture of cowpea hay and Johnson grass with over 30 percent but not over 70 percent of Johnson grass.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Cowpea and Cowpea Mixed Hay

U. S. grade	Leafiness of cowpea hay (minimum percent of leaves, including seed pods in which the seeds are not more than one-half developed) ¹	Color	Maximum percent of foreign material
No. 1-----	40	Shall be green to greenish yellow or greenish brown.	10
No. 2-----	25	May be greenish yellow or greenish brown to brown.	15
No. 3-----	10	May be brown or weathered.	20
Sample grade---	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly weathered, badly over-ripe, or very dusty; or which is otherwise of distinctly low quality.		

¹ Does not apply in the classes Cowpea Heavy Grass Mixed Hay and Cowpea Heavy Johnson Mixed Hay.

(c) Special Grades for Cowpea and Cowpea Mixed Hay

(1) Extra Leafy Hay—

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Cowpea, Cowpea Light Grass Mixed, and Cowpea Light Johnson Mixed in group VIII in which the leafiness of the cowpea hay is 50 percent or more, with most of the leaves clinging to the stems.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be

added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Cowpea Hay.

(2) Leafy Hay—

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Cowpea, Cowpea Light Grass Mixed, and Cowpea Light Johnson Mixed in group VIII in which the leafiness of the cowpea hay is 40 percent or more, but shall not include hay in which the leafiness of the cowpea hay meets the requirements for extra leafy hay.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Cowpea Hay.

(3) Extra Green Hay—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group VIII which has a natural green color.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Cowpea Hay.

(4) Green Hay—

(i) *Requirements.* Green hay shall be hay of any of the grades lower than grade No. 1 of any of the classes in group VIII which has a green to greenish yellow or greenish brown color.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class the word "Green."

Example, U. S. No. 3 Green Cowpea Light Grass Mixed Hay.

Peanut and Peanut Mixed Hay (Group IX)

(a) Classes and Class Requirements

Class	Mixture percentages
Peanut.....	Peanut hay with not over 10 percent of grasses.
Peanut light grass mixed.	A mixture of peanut hay and grasses with over 10 percent but not over 30 percent of grasses.
Peanut heavy grass mixed.	A mixture of peanut hay and grasses with over 30 percent but not over 60 percent of grasses.

(b) Numerical and Sample Grades and Grade Requirements for all Classes of Peanut and Peanut Mixed Hay

U. S. grade	Leafiness of peanut hay (minimum percent of leaves, including whole peanut pods) ¹	Color	Maximum percent of foreign material
No. 1 ²	25	Shall be green to greenish brown.	10
No. 2 ²	15	May be greenish brown to brown.	15
No. 3.....	5	May be brown or weathered.	20
Sample grade....	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly weathered, badly overripe, or very dirty; or which is otherwise of distinctly low quality.		

¹ Does not apply in the class Peanut Heavy Grass Mixed Hay.

² Grades No. 1 and No. 2 may be dusty but shall not contain any appreciable quantity of soil or dirt.

(c) Special Grades for Peanut and Peanut Mixed Hay

(1) Extra Leafy Hay—

(i) *Requirements.* Extra Leafy Hay shall be hay of any of the grades of the classes Peanut and Peanut Light Grass Mixed in group IX in which the leafiness of the peanut hay is 35 percent or more.

(ii) *Grade designation.* When the special grade Extra Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Leafy."

Example, U. S. No. 1 Extra Leafy Peanut Hay.

(2) Leafy Hay—

(i) *Requirements.* Leafy Hay shall be hay of any of the grades lower than grade No. 1 of the classes Peanut and Peanut Light Grass Mixed in group IX in which the leafiness of the peanut hay is 25 percent or more, but shall not include hay in which the leafiness of the peanut hay meets the requirements for extra leafy hay.

(ii) *Grade designation.* When the special grade Leafy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Leafy."

Example, U. S. No. 2 Leafy Peanut Light Grass Mixed Hay.

(3) Extra Green Hay—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of any of the classes in group IX which has a natural green color.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Peanut Hay.

(4) Green Hay—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of

any of the classes in group IX which has a green to greenish brown color.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 2 Green Peanut Heavy Grass Mixed Hay.

Grass Hay

(Group X)

(a) Class and Class Requirements

The group Grass Hay shall have one class, namely, Grass Hay, which shall be (1) hay containing more than 60 percent of grasses, sedges, and/or rushes other than timothy, Johnson grass, upland grasses, midland grasses, grain cut for hay, millet, and/or Sudan grass; or (2) hay consisting of mixtures of upland grasses, midland grasses, timothy, and/or other grasses, and containing not more than 10 percent of legumes, which does not meet the class requirements of any of the classes in Prairie Hay, group III.

NOTE.—Questions relating to, or samples of, the kinds of grasses, sedges, and/or rushes that may be included in the class Grass Hay should be submitted to the Grain Branch, Production and Marketing Administration, United States Department of Agriculture, for determination or interpretation.

(b) Numerical and Sample Grades and Grade Requirements for Grass Hay

U. S. grade	Color (minimum percent of green color)	Maximum percent of foreign material
No. 1 ¹ -----	50	10
No. 2 ¹ -----	35	15
No. 3-----	10	20
Sample grade-----	Hay which does not come within the requirements of any of the numerical grades; or which contains more than a trace of injurious foreign material; or which has any objectionable odor; or which is undercured, heating, hot, wet, musty, moldy, caked, badly broken, badly stained, badly weathered, badly overripe, or very dusty; or which is otherwise of distinctly low quality.	

¹ Grades No. 1 and No. 2 shall not include hay that is stained.

(c) Grade Designations for Grass Hay

Grade designations for Grass Hay shall include after the words "Grass Hay" either (1) such local trade names as will identify the kind of grasses, sedges, and/or rushes; or (2) the common name of the various kinds of grasses, sedges, rushes, and legumes which constitute more than 10 percent of the mixture, written in the order of importance. Grasses which cannot be identified can be described by the term "miscellaneous grasses."

(d) Special Grades for Grass Hay

(1) *Extra Green Hay*—

(i) *Requirements.* Extra Green Hay shall be hay of any of the grades of the class Grass Hay in group X which has 65 percent or more green color, but shall not include hay that is stained.

(ii) *Grade designation.* When the special grade Extra Green is applicable, there shall be

added to and made a part of the grade designation, preceding the name of the class, the words "Extra Green."

Example, U. S. No. 1 Extra Green Grass Hay, Redtop and Bluegrass.

(2) *Green Hay*—

(i) *Requirements.* Green Hay shall be hay of any of the grades lower than grade No. 1 of the class Grass Hay in group X which has 50 percent or more but less than 65 percent green color, but shall not include hay that is stained.

(ii) *Grade designation.* When the special grade Green is applicable, there shall be added to and made a part of the grade designation, preceding the name of the class, the word "Green."

Example, U. S. No. 2 Green Grass Hay, Redtop.

Mixed Hay

(Group XI)

(a) Class and Class Requirements

The group Mixed Hay has one class, namely, Mixed Hay, which shall be any mixture of hay not classified in the groups I to X, inclusive, but which contains 50 percent or more singly or in combination of alfalfa, timothy, clover, upland grasses, midland grasses, grasses (as defined in sec. 57.1 (k)), Johnson grass, grain hay, vetch hay, lespedeza, soybean hay, cowpea hay, and peanut hay.

(b) Grades for Mixed Hay

(1) *Grade requirements.* Mixed Hay shall be graded according to the grade requirements and the specifications in sections 57.1 through 57.12 for the kind of hay which predominates in the mixture, except that all numerical and special grade specifications pertaining to leafiness, stemminess, coarseness, and fineness shall be disregarded.

(2) *Grade designation.* The grade designation for Mixed Hay shall include successively, in the order named: (i) The letters "U. S."; (ii) the number of the grade or the words "Sample grade," as the case may be, and any special grade that may apply; (iii) the words "Mixed Hay"; and (iv) the name and approximate percentage of each kind of hay which constitutes more than 10 percent of the mixture listed in the order of decreasing percentages.

UNITED STATES STANDARDS FOR STRAW²

Terms Identified

For the purposes of the United States standards for straw:

(a) *Straw*. Straw shall be the stems, leaves, and chaff of the grain plants, wheat, oat, barley, rye, and rice, which remain after threshing, and may include not more than 10 percent (of the total straw) of timothy and other grasses that are not coarse and woody.

(b) *Chaff*. Chaff shall be shattered glumes, and pieces of straw not over 4 inches in length.

(c) *Foreign material*. Foreign material shall be matter other than straw, except grasses that are not coarse and woody.

Principles Governing Application of Standards

The following principles shall apply in the determination of the grades of straw:

(a) *Basis of grade determinations*.

(1) The determination of chaff, foreign material, temperature, odor, and general condition shall be on the basis of the straw as a whole.

(2) The determination of color shall be on the basis of the method prescribed by the Grain Branch, Production and Marketing Administration, United States Department of Agriculture.

(b) *Methods of determining percentages*. Percentages of chaff and foreign material shall be ascertained by weight.

² The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act (21 U. S. C. 301 et seq.).

Grades for Straw

(a) Numerical and Sample Grades and Grade Requirements for Straw

U. S. grade	Color	Maximum percent of chaff
No. 1.....	Bright.....	35
No. 2.....	Weathered or stained.....	35
Sample grade.....	Straw which does not come within the requirements of any of the numerical grades or which contains more than 75 percent of chaff or more than 10 percent of foreign material; or which is heating, hot, wet, musty, moldy, caked, badly stained, badly weathered, or very dusty; or which is otherwise of distinctly low quality.	

(b) Grade Designation

Grade designations for straw shall include successively, in the order named: (1) The letters "U. S."; (2) the number of the grade or the words "Sample grade," as the case may be, and any special grade that may apply; (3) the words "Wheat Straw," "Oat Straw," "Barley Straw," "Rye Straw," or "Rice Straw," as the case may be. In the case of mixed straw the names of the different kinds of straw shall be given in the grade designation.

(c) Special Grades for Straw

(1) *Straight rye straw*—

(i) *Requirements*. Straight rye straw shall be rye straw of any grade which has been threshed without opening the sheaves or permitting the straw to pass through the threshing machine and which has been pressed into large box-pressed bales.

(ii) *Grade designation*. When the special grade Straight is applicable, there shall be added to and made a part of the grade designation,

preceding the name of the kind of straw, the word "Straight."

Example, U. S. No. 1 Straight Rye Straw.

(2) *Long rye straw*—

(i) *Requirements.* Long rye straw shall be rye straw of any grade which has been threshed without opening the sheaves or permitting the straw to pass through the threshing machine and which has been pressed into perpetual-pressed bales.

(ii) *Grade designation.* When the special grade Long is applicable, there shall be added to and made a part of the grade designation, preceding the name of the kind of straw, the word "Long."

Example, U. S. No. 2 Long Rye Straw.

(3) *Chaffy straw*—

(i) *Requirements.* Chaffy straw shall be wheat straw, oat straw, barley straw, rye straw, or rice straw, as the case may be, of any grade which contains more than 35 percent of chaff.

(ii) *Grade designation.* When the special grade of Chaffy is applicable, there shall be added to and made a part of the grade designation, preceding the name of the kind of straw, the word "Chaffy."

Example, U. S. No. 2 Chaffy Wheat Straw.

EFFECTIVE DATE

The foregoing standards shall become effective July 1, 1949, and on said date shall supersede the United States Standards for Hay and Straw which became effective September 1, 1944.

Done at Washington, D. C., this 21st day of June 1949. Witness my hand and the seal of the United States Department of Agriculture.

[SEAL]

CHARLES F. BRANNAN,
Secretary of Agriculture.

IMPORTANT FEATURES OF FEDERAL HAY INSPECTION

Federal hay inspection is authorized under the Agricultural Marketing Act of 1946 (60 Stat. 1087; 7 U. S. C. 1621-1627) and the so-called Farm Products Inspection Act consisting of the item for market inspection of farm products recurring each year in the annual appropriation act for the United States Department of Agriculture.

Organization of Federal Hay-Inspection Service

A Federal hay-inspection service is conducted by the Grain Branch, Production and Marketing Administration, under the authority quoted in the preceding paragraph.

The general plan under this authority provides for the establishment of the hay-inspection service by two methods: (1) Federal hay inspectors employed at important central markets or shipping points under cooperative agreements between the Production and Marketing Administration and local organizations, such as commercial exchanges, dealers' or growers' associations; and (2) Federal-State hay inspectors employed under cooperative agreements between the Production and Marketing Administration and State departments of agriculture. In the latter case the agreement usually provides for the service at all points within the State.

The Grain Branch trains the inspectors, employed by the cooperative agencies under these agreements, in the application of the official hay and straw standards of the United States and in the Department's methods of inspecting hay. After the inspectors satisfactorily complete this training they are licensed as Federal hay inspectors and the Grain Branch supervises their work during the life of the license. The organization cooperating with the Production and Marketing

Administration pays the inspector for his work and pays all other local expenses, such as office rent, necessary to the proper conduct of the work.

The organization cooperating with the Production and Marketing Administration usually collects the fees charged for inspections made under agreements of this kind. The funds obtained in this way are divided between the local organization and the Production and Marketing Administration in such a manner that both are recompensed as nearly as possible for the expense incurred by them in the conduct of the service.

The work of the local inspectors is supervised by supervising inspectors located at central points in the large hay producing and consuming areas. The supervising inspectors also are available to make inspections at points in their territory where no other inspectors can be obtained and to assist producers, dealers, and consumers in obtaining all possible benefit from the Federal hay and straw standards and hay inspection service.

In those cases where the hay inspection service is established in cooperation with some State agency, such as the State department of agriculture or State market commission, the inspectors are employees of that department. Federal-State certificates issued by these inspectors are supported by the authority of the State as well as the Federal Government and in most cases are prima facie evidence of the truth of the facts contained therein, in State courts as well as in Federal courts.

In several of these States the use of United States standards is compulsory for all transactions involving hay unless the hay is especially marked or described as "not graded." Some of these States also prohibit any person from certifying to the grade of hay unless he is either an inspector licensed by the State or a State employee designated as an inspector.

Location of Inspectors and Designation of Markets

Federal or Federal-State hay inspectors are located at all points where arrangements for their employment can be made with some suitable organization under one of the plans previously outlined. Wherever there is sufficient demand for inspection to pay the expense of having an inspector but no suitable organization is prepared to cooperate with the Production and Marketing Administration, an inspector who is a full-time Government employee may be located at that place or arrangements may be made to supply the service in any other manner that may appear desirable.

Distributing and consuming markets at which inspectors are located are designated as important central markets for the inspection of hay. The inspectors located at such markets also will inspect hay received at all points within a reasonable distance of these markets insofar as they have time for work of that kind. In those States where Federal-State inspectors are located, they are usually available to handle inspections at any point within the State.

Persons interested in having a hay inspector located at any place should write the Grain Branch, Production and Marketing Administration, United States Department of Agriculture, Washington 25, D. C. Communications of this sort should outline as fully as possible the situation at the point where inspection is desired, including the name of any State or local organization with whom the Production and Marketing Administration might cooperate in establishing the service, the probable number and kind of inspections that such an inspector would make annually, and the fee that might be charged for each inspection.

Qualifications of Inspectors

All Federal hay inspectors must complete satisfactorily a course of training provided by the Grain Branch before being designated or licensed as inspectors. The training course usually covers a period of 2 to 3 weeks. Men admitted to these training schools are required to have at least a common school education and to have had either sufficient experience in handling and marketing hay or college training along agricultural lines to qualify them to grasp readily the principles on which the official hay and straw standards are based. In other words, the schools are for the purpose of training men already familiar with hay and straw to apply properly the official standards and not for the purpose of making hay inspectors of men who know nothing about hay.

Each candidate for an inspector's license is required to pass satisfactorily a color test prescribed by the Grain Branch. A person having any indication of color blindness cannot become a competent hay inspector.

Inspectors' Training Schools

The schools for training inspectors are held at the hay-standardization laboratories of the Grain Branch in Washington and Kansas City, and at other points where needed. There is no regular time for these schools but they are held whenever a sufficient number of persons require training. After inspectors are designated or licensed they are brought together at central points in different sections from time to time for additional training and discussion of problems relating to their work. Such meetings usually last from 1 to 3 days and are of material aid in keeping the work of the inspectors uniform at all times.

Federal Hay-Inspection Certificates

Regulations of the Secretary of Agriculture governing the inspection of hay require each inspector to issue an inspection certificate for each lot of hay inspected by him. The law provides that all such certificates are receivable in all courts of the United States as *prima facie* evidence of the truth of the statements they contain. A number of the States also have laws making all Federal certificates, as well as Federal-State certificates, acceptable as *prima facie* evidence in their State courts.

Kinds of Inspection Available

To take care of the various conditions under which hay is presented for inspection, it has been necessary to provide several types of inspection known as lot inspections, sample inspections, and appeal inspections.

Lot inspections may be either complete inspections or partial inspections.

Complete inspections are made only when the inspector either sees every bale in the lot or a sufficiently representative portion of the lot to permit him to determine the quality and condition of the entire lot. In such cases the inspector issues a complete inspection certificate which gives a statement of the quality and condition of all hay in the lot without any qualifications. The words "Complete Inspection" are printed in large type on this form of certificate. Complete inspection usually can be made on hay that is being loaded into or unloaded from cars or that is stored in public warehouses in piles of not more than 10 to 12 tons each. It also can be used for what is commonly known as plug inspection of carlots, providing the plug removed from the carload is of sufficient size and is taken from the center back to each end of the car.

Complete inspections may be original inspections or may follow one or more partial inspec-

tions of the same lot. When a complete inspection follows a partial inspection, all of the hay in the lot covered by previous partial inspections at the same place, together with the remainder of the lot not previously inspected, must be available for the complete inspection.

As many complete inspections may be obtained at the same or any other place as applicants may desire. Ordinarily, when additional complete inspections are wanted on the same lot of hay they are for the purpose of ascertaining whether there has been any change in the quality and/or condition of the hay since the previous inspection, or for the purpose of obtaining up-to-date certificates. Certificates issued on such additional inspections always give the number and date of all certificates covering previous inspections on the same lot at the same place.

Partial inspections are made when not enough of the hay in the lot is seen to permit the inspector to make a complete inspection. For example, a car-door inspection is a partial inspection. In such cases the inspector issues a partial-inspection certificate. The word "Partial" is printed on this certificate in large type. The certificate states the part of the lot examined by the hay inspector and that the grade designation applies only to the part actually seen.

Additional partial inspections may be obtained when a complete inspection cannot be made but when a statement is desired about the quality and condition of a different portion of the lot or of the same portion of the lot covered by previous partial inspections, or for the purpose of ascertaining whether there has been any change in the quality or condition of the hay since the previous inspection, or for the purpose of obtaining an up-to-date certificate. As many inspections, either partial or complete, may be obtained at the same or any other place, as the applicant may desire. Certificates issued on such additional partial inspections not only state the por-

tion of the lot examined by the inspector and the quality and condition thereof, but also give the number and date of all certificates covering previous inspections on the same lot and at the same place.

Sample inspections are inspections of single bales or smaller portions of hay. This provides means for learning the grade of a lot which is located too far from the inspector's office to permit the expense of having an inspector examine the lot of hay. Sample inspection certificates show the size of the sample examined by the inspector and state that the quality and condition shown is that of the sample only. The value of a certificate of this kind depends largely on whether the sample is truly representative of the lot from which it was taken. If a controversy is to be settled by means of a sample inspection, all interested parties should agree upon a representative sample for this purpose before sending it to the inspector. Samples for inspection should weigh not less than 10 pounds and should be in such physical condition as to permit the inspector to determine all factors affecting their quality and condition. The following form is suggested for use in submitting agreed samples.

TO THE OFFICE OF FEDERAL HAY INSPECTION:

We agree that the accompanying sample is a representative sample taken on -----, 19____, from a lot of hay identified and then located as follows: -----

(Car number or other identification of hay)

and hereby request that it be inspected and certificated by a Federal hay inspector.

Place -----
Date -----

(Shipper or his representative) (Address) -----

(Receiver or his representative) (Address) -----

Appeal inspections can follow only complete inspections. An appeal inspection involves a question of the accuracy of the inspection from which the appeal was taken, and can be made only provided the hay has not left the place where the inspection was made, the condition of the hay has not undergone a material change, the identity of the hay has not been lost, and the application is filed before the close of the second business day following the original inspection from which the appeal is requested. Therefore, an appeal inspection is never made by the inspector who made the inspection on which the appeal was taken but by an inspector designated specifically for the purpose by the Director of the Grain Branch. An appeal inspection certificate gives a clear statement of the quality and condition of all hay in the lot and refers specifically to the previous inspection from which the appeal was taken and which it supersedes.

No appeal may be taken from an inspection made at any other place, but a new complete inspection of the same lot may be obtained and an appeal may then be taken from such inspection upon compliance with the regulations of the Secretary of Agriculture.

Who Receives Certificates

The original and one copy of any form of Federal hay-inspection certificate are always delivered to the person who made application for the inspection. Upon request, copies of the original inspection certificate are furnished to other financially interested persons, which include interested carriers and public warehouses. Copies of inspection certificates which include the results of previous inspections and copies of appeal inspection certificates are sent to all interested parties, if known, and to such carriers as have been applicants for previous inspections.

Standards Used in Making Federal Inspections

The law establishing Federal hay inspection authorizes the Secretary of Agriculture to certify the quality and condition of hay, but the law does not specify the manner in which the quality and condition shall be stated. Federal hay inspectors, however, are required to use the United States standards for all kinds of hay and straw for which such standards have been established. In addition, certificates must show any other facts (such as poor baling), which affect the value of hay or straw but are not covered by the standards. For hay and straw to which official standards do not apply inspectors are instructed to describe the quality and condition of the hay or straw as nearly as possible.

What Federal Inspection Certificates Show

All Federal inspection certificates show the date on which the inspection was made and the quantity of hay in the lot inspected together with the identification and location of the hay at the time of inspection. Partial-inspection certificates also show the portion of the lot actually examined by the inspector.

Following these items all certificates show the grade designation of all the hay and straw examined according to the United States standards whenever these standards apply.

Notations about factors affecting the grade may follow the grade designation. If there is more than one class or grade of hay or straw in the lot the quantity of each class and grade seen by the inspector is stated separately, the largest quantity being named first.

Statements about other conditions affecting the value of the hay but which do not affect the class or grade are placed below the grade designation. These include poor baling, defects in cars in which the hay is loaded, and similar information.

Fees and Charges

The Secretary of Agriculture authorizes certain fees and charges to be collected for the work of Federal inspectors. These vary somewhat at different points depending on the volume of business at that point, the accessibility of localities where inspections ordinarily are made, and other factors.

The fees are the amounts charged for the actual work of making inspections and appeal inspections. The charges cover amounts that inspectors are permitted to charge for their time and travel expenses when making inspections at points away from the regular stations. Schedules of fees and charges at any point where inspectors are located can be obtained upon application to the Grain Branch, Production and Marketing Administration, United States Department of Agriculture, Washington 25, D. C.

How to Obtain Inspection

Any person having a financial interest in a lot of hay who desires to obtain inspection of the lot should make application for inspection to any Federal hay inspector or any Federal-State hay inspector. The application should give the necessary information to permit the inspector to determine whether an inspection can be made under the act authorizing the service and to locate the hay for the purpose of making the inspection. The applicant should arrange also with the inspector for payment of the necessary fees and charges. The inspector receiving the application will either arrange to make the inspection or inform the applicant of the name and address of the inspector who might be able to handle the inspection, or advise the applicant why the inspection cannot be made.

IMPORTANCE OF TIME OF CUTTING

To produce the top grades which have relatively high nutritive value and which command the highest market prices:

Alfalfa should be cut when one-tenth to one-fourth in bloom. In those areas in which alfalfa blooms sparingly because of seasonal conditions the growth of basal shoots and the general appearance of the field should serve as a guide for cutting. Alfalfa mixed hay should be cut when the alfalfa has arrived at the proper stage of maturity without regard to the other kinds of hay in the mixture.

Losses in leafiness occur and the stems become coarse and woody when alfalfa is allowed to pass beyond the full-bloom stage prior to cutting, thus lowering the grade and the feed and market value of the hay.

Timothy should be cut from the early- to the full-bloom stage. Maximum yields of protein per acre are obtained when the timothy is cut before full bloom. *Mixtures of timothy and such early-maturing grass as bluegrass* should be cut when the grasses are in full bloom and prior to the time when the grasses have lost their green color. *Grasses other than timothy and Johnson grass* should be cut not later than the full-bloom stage.

Clover should be cut at the half- to the full-bloom stage. Many of the leaves turn brown and wither and these leaves are often lost if the clover is allowed to stand beyond the full-bloom stage. *Mixtures of clover and timothy* should be cut when the clover is at the half- to full-bloom stage. The timothy will not have reached the full-bloom stage at this time unless the mixture consists of timothy and mammoth red clover.

Prairie grasses should be cut before the plants begin to turn brown from dry weather or maturity. *Prairie grasses* such as bluestem are likely to have jointed stems and seed heads at

maturity and when cut in this condition the hay cannot meet the specifications for high-grade Upland Prairie Hay.

Johnson grass should be cut when the heads have started to emerge from the boot, or not later than when one-fourth of the heads have emerged. There will be fewer viable seeds in the heads of the earlier-cut hay. When Johnson grass is cut after the heads have fully emerged the hay is of lower grade and market value because of the coarse and woody stems, or because of insufficient green color.

Johnson grass should be cut prior to, or not later than, the forming of the heads in the boot if it is to meet the color and texture requirements of the grade U. S. No. 1 Extra Green Fine Johnson Hay.

Grain and vetch should be cut for hay so as to meet the maturity specifications for these kinds of hay given under grade requirements for the group Grain, Wild Oat, Vetch, and Grain Mixed Hay.

Lespedeza (annual) should be cut for hay when the first bloom appears or just before. Losses in leafiness occur when lespedeza is allowed to stand beyond the full-bloom stage prior to cutting.

Lespedeza that is allowed to ripen sufficient seed to reseed itself before being cut for hay will lose its leaves and, therefore, will not make hay of high quality. The practice of cutting just after a frost, which causes the seed to fall, also tends to make an inferior hay.

Soybeans should be cut for hay before the seeds are three-fourths developed. If the cutting is delayed beyond this time the stems become hard and woody and many of the leaves will have fallen, thus decreasing the palatability and feeding value of the hay. After the seeds are about half developed the lower leaves will begin to fall but the increase in the weight of the seeds about compensates for the leaf loss in total

digestible nutrients. Therefore, hay cut when the seeds are three-fourths developed will still have about the same feeding value.

Cowpeas should be cut for hay when the first pods have turned yellow.

IMPORTANCE OF GOOD BALING

Poorly baled hay includes principally bales that are ragged, bales having wires of unequal tension, and bales of varying lengths. Hay that is poorly baled is discriminated against in hay markets because it is unsightly and difficult to handle. When hay is poorly baled a notation to that effect is made on Federal certificates.



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MS. 27346

**END OF
TITLE**